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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,019	04/27/2005	Petrus Maria De Greef	NL02 1118 US	1683
65913	7550	08/25/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER ABDIN, SHAHEDA A	
			ART UNIT 2629	PAPER NUMBER
			NOTIFICATION DATE 08/25/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

### Office Action Summary

**Application No.**

10/533,019

**Applicant(s)**

DE GREEF, PETRUS MARIA

**Examiner**

SHAHEDA A. ABDIN

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-10 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-10 and 13-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/888)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. The amendment (RCE) filed on 05/27/2008 has been entered and considered by Examiner.

### Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5-9 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Adachi et al. (US Patent No: 6924824).

(1) Regarding claim 1:

Adachi teaches a method of scanning lines in a display (10, Fig. 1) within a frame (one frame, Fig. 5a and 5c together shows one frame period), where driving luminance information provided to the display for each pixel within the frame is divided into subfields (SF1-SFn) (column 8, lines, 26-27, column 9, lines 25-27) the method including the steps of:

selecting subfields (SF1-SF4) to be used when scanning lines (horizontal lines) in a set of scanning cycles (four horizontal, 4H cycle) equivalent to the number of subfields existing for driving the pixels column (vertical line) (column 11, lines 40-57),

scanning the lines (16 horizontal lines i.e. 0-15) consecutively ( $0 \rightarrow 1 \rightarrow 2 \rightarrow \dots 15$ ) for the set of scanning cycles (16H) (column 2, lines 46-59, Fig. 12), varying the selection of subfield (e.g. SF1, SF4) from line to line in each scanning cycle such that the subfields (SF1 and SF4) are selected in a consecutive order from line to line as the lines are scanned consecutively (note that in Fig. 5 and Fig. 12, 16 horizontal lines i.e. 0-15 consecutive order (i.e.  $0 \rightarrow 1 \rightarrow 2 \rightarrow \dots 15$ ), the subfields (i.e. SF1 and SF4, Fig. 5d) of two consecutive lines (e.g. 1 and 2) do not overlap with respect to time during each scanning cycle (column 9, lines 48-53), no two consecutive line scans use the same subfield (e.g. Fig 5 shows line 2<sup>nd</sup> scans use SF1, but SF4 is scanned in line 3<sup>rd</sup>) and no line is scanned using the same subfield twice during the set of scanning cycles (e.g. line 2<sup>nd</sup>, there is no repeated subfield) (also see column 6 lines 14-19), image flicker caused by the subfields is reduced (see Fig.5, also see column 5, lines 57-60, column 6 lines 14-19, column 9, lines 48-50 and column 11, lines 20-39).

(2) Regarding claim 5:

Adachi teaches the subfields having varying (increasing) lengths (column 5, lines 8-35, Fig. 17 and fig 18).

(3) Regarding claim 6:

Adachi teaches the subfields being sub frames (sub-frames SF1-SFn) provided according to a frame length control scheme (e.g. subfield periods are 5H, 9H, 17H, 33H correspond one frame period 64H) (see column 10, lines 43-45).

(4) Regarding claim 7:

Adachi teaches the subfields being sub frames provided according to a frame rate scheme (e.g. N sub-frames correspond to N cycle) (see column 11, lines 48-53)

(5) Regarding claim 8:

Adachi teaches the subfields being provided according to a pulse width modulation scheme (column 9, lines 11-15).

(6) Regarding claim 9:

Adachi teaches the subfields (SF1-SFn) being provided according to a combination of the schemes listed in claims 5, 6 and 7 (see column 5, lines 8-35, column 10, lines 43-45 and column 11, lines 48-53).

**Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al. in view of Tsuchiya et al. (US Pub. No: 2002/0105510 A1).

Regarding claim 2:

Adachi discloses a scan line a subfield to a pixel but does not disclose RMS voltage.

However, Tsuchiya in the same field of endeavor discloses RMS voltage ([0189], [0190], Fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate RMS voltage as taught by Tsuchiya applying to the sub-field (sub-frame) of Adachi so that a scan of a line can be including an RMS voltage corresponding to a value of the subfield to a pixel. In this configuration the system will provide a cost reduction and lower power consumption electronic device (Tsuchiya, [0003]).

6. Claims 10, and 13 –18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al. in view of Okumura et al. (US Patent No: 5844534).

(1) Regarding claims 10 and 18:

Adachi teaches a driving (driving at 20) luminance information (S1-Sn) including subfields (SF1-SFn for one frame), and supplying the subfields to a line driving unit (30),

Adachi teaches a device for scanning a number of lines G1-Gm in a display within a frame comprising:

a line driving unit (30) arranged to scan each line consecutively (sequentially,  $0 \rightarrow 1 \rightarrow 2 \rightarrow \dots 15$ ) with the information of each pixel on the display in a number of scanning cycles equivalent to the number of subfields existing for driving the pixels (column 9, lines 25-27, and column 10, lines 54-64),

a control unit (e.g. 803; column 8, lines 62-67) arranged to provide variation of the selection of subfield (e.g. SF1, SF4) from line to line for each scanning cycle such that the subfields are selected in a consecutive order from line to line as the lines are scanned consecutively (see the discussion in claim 1), the subfields (i.e. SF1 and SF4, Fig. 5d) of two consecutive lines (e.g. 1 and 2) do not overlap with respect to time during each scanning cycle (column 9, lines 48-53), no two consecutive line scans use the same subfield (e.g. Fig. 5 shows line 2<sup>nd</sup> scans SF1, but SF4 is scanned in line 3<sup>rd</sup>) and no line is scanned using the same subfield twice during the set of scanning cycles (e.g. line 2<sup>nd</sup>, there is no repeat same sub-field), such that image flicker caused by the different sizes of the subfields is reduced (column 5, lines 57-60), column 9, lines 48-50 and column 11, lines 20-39) (e.g. in the case of Fig. 3, the zeroth scan line cycle, so that any one sub-frame is not written to any one scan line more than once, see column 9, lines 48-50).

Adachi does not teaches a conversion unit for converting received luminance values in to driving luminance information including subfields .

Okumura in the same field of endeavor teaches a conversion unit (14) for converting receiving luminance values in to driving luminance information including subfields (see column 24, lines 1-22).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a conversion unit (14) as taught by Okumura into the driving unit (20) of Adachi so that the luminance information can be supply to the subfield and the line driving unit. In this configuration the system would provide a high quality image with reduced power consumption (Okumura, column 4, lines 42-46).

(2) Regarding claim 13:

Adachi teaches the subfields having differing lengths (increasing lengths) column 5, lines 8-35, Fig. 17 and fig 18).

(3) Regarding claim 14:

Adachi teaches the subfields being provided as subframes according to a frame length control scheme (column 10, lines 40-45).

(4) Regarding claim 15:

wherein the subfields are provided as sub frames according to a frame rate



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control scheme (control same number of scanning cycle which equal to the subfield) (column 11, lines 48-53).

(5) Regarding claim 16:

Adachi teaches the subfields being provided according to a pulse width modulation scheme (column 9, lines 11-15).

(6) Regarding claim 17:

Adachi teaches the subfields being provided according to a combination of schemes (column 5, lines 8-35, column 10, lines 40-45 and column 11, lines 48-53).

### **Response to Arguments**

7. Applicant's arguments with respect to claims 1, 10, and 18 have been considered but are not persuasive.

Applicant argues that (1) "as illustrated in Fig. 3, 4, and 5, of Adachi et al., scan lines are selected such that the sub-frame periods overlap for two consecutive lines", (2) based on the illustration of Fig. 5b, it is clearly shows that the selection sequence of Adachi et al. involves using sub-frame periods that overlap with respect to time for two consecutive lines"

In response (1) and (2), Examiner respectfully disagree Applicant's point of view. It should be noted that Adachi's reference clearly teaches the same feature as recited in amended portion of claims 1, 10 and 18 (see the discussion in claims 1, 10 and 18). Examiner also point out that no where in Fig. 5b shows that selection sequence involves using sub-frame periods that overlap with respect to time for two consecutive lines. Moreover, in column 9, lines 48-53, Adachi's reference teaches that "**any one subframe is not written to any one scan line more than once**" which is clearly shows in the illustration of Fig. 3, Fig. 5b an 5d.

### Conclusion

### Inquiry

8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Shaheda Abdin** whose telephone number is (571) 270-1673.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard HJerpe** could be reached at (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pari-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shaheda Abdin

08/16/2008

/Richard Hjerpe/

Supervisory Patent Examiner, Art Unit 2629

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